

ABSTRACT

FIELD EMISSION DEVICES

A field electron emission cathode is manufactured by depositing on an insulating substrate 300, by low resolution means, a sequence of a first conducting layer 301, a field emitting layer 302 and a second conducting layer 303 to form at least one cathode electrode. There is then deposited on the cathode electrode by low resolution means, a sequence of an insulating layer 304 and a third conducting layer 305, to form at least one gate electrode. The structure thus formed is then coated with a photoresist layer 306. The photoresist layer 306 is then exposed by high resolution means to form at least one group of emitting cells, the or each such group being located in an area of overlap between a cathode electrode and gate electrode. To complete the cells, the conducting and insulating layers 305, 304, 303 are etched sequentially to expose the field emitting layer 302 in the cells, and remaining areas of the photoresist layer 306 are removed. Thus, field emitting materials and devices can be manufactured using relatively low cost techniques.